CUBIT Capability Proposal

Technical Area
Geometry, Meshing, Infrastructure, GUI, Graphics, etc..

Geometry

Technical Lead
Cubit Developer in charge of technical area

Philippe Pebay

MRD Description
Describe the capability in terms of how a user would see it.

Add a geometry-based and metric-based surface remeshing tool to CUBIT.

SRS Description
What needs to be done by Cubit developers to implement this capability? Break the tasks into steps if applicable. (Steps should be on the order of 2 man-weeks or more)

1. implement a geometry-based surface remeshing tool 2. implement a metric-based surface remeshing tool

Justification
Describe why this is important and what impact it will have if it is implemented. (or not implemented).

Geometry-based surface remeshing will to (1) improve end meshes quality (low quality boundary triangulation yields poor volume meshes), and (2) reduce mesh size while preserving the surface approximation (application in particular to geologic meshes). Metric-based surface remeshing will permit adaptation of a surface mesh to a given metric, such as one provided by a finite element solution.

Resources
Who will work on this

Time estimate
How much time will it take in man-weeks

Targeted Release
10.2 (August 06), 10.3 (March 2007), 10.4 (August 2007), Future (beyond FY07)

P. Pebay + 1 other (ideally)	8 weeks	10.3

Submitted By:

Date:

Philippe Pebay	4/3/06